Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division
Disease Outbreak and Control Division

http://www.state.hi.us/doh/resource/comm_dis/cdr.html November/December 2002

Epidemiology of Tuberculosis in Hawai`i, 2001

Over the past decade, the State of Hawai`i has consistently reported one of the highest annual tuberculosis (TB) case rates in the country. In 2001, Hawai`i again led the nation in case rates, with 150 cases and a rate of 12.3 new cases per 100,000 population. Although this represents a 10.3% increase from the 136 new cases reported in the previous year, the incidence has generally fallen over the last ten years (see Figure 1).

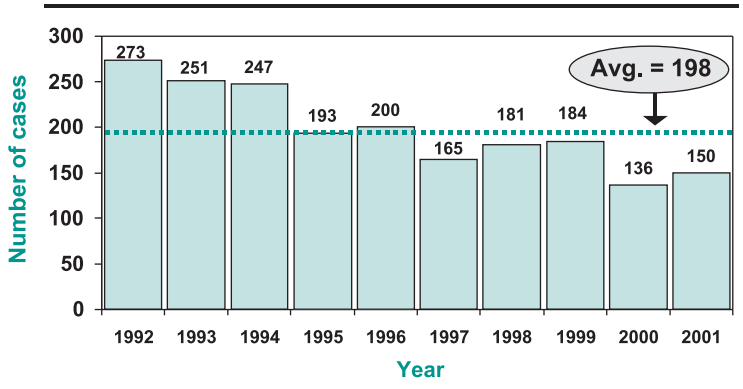
Cases by County

The City and County of Honolulu continues to report the highest number of TB cases in the state, with 123 cases and an incidence rate of 14.0 cases per 100,000 population, accounting for 82% of the state's TB morbidity in 2001. Maui County reported 14 cases (incidence rate of 10.9 cases per 100,000), Hawai`i County reported nine cases (incidence rate of 6.1 cases per 100,000), and Kaua`i County reported four cases (incidence rate of 6.8 cases per 100,000). The TB case rate in the State of Hawai`i was more than double the national case rate of 5.6 cases per 100,000 in 2001.[1]

Deaths from TB

TB death rates in Hawai`i fell along with incidence rates. There were five deaths from TB in 2001 in Hawai`i, for a mortality rate of 0.4 deaths per 100,000 population. This was consistent with the US mortality rate of 0.3 TB deaths per 100,000 population, or 751 TB fatalities in 2000.[1]

Fig. 1: Reported TB Cases Hawai`i, 1992 - 2001



Cases by Age

Most of the new TB cases reported in 2001 were in older age groups: 56 (37.3%) were between the ages of 45 to 64 years, and 46 (30.7%) were 65 and older. Our foreign-born elderly who immigrated from TB endemic areas with latent TB infection (LTBI) [see Definitions box] may continue to be an active reservoir of future TB cases. Most of these residents contracted their infection earlier and are now reactivating the disease because of waning immunity and poor general health. Most pediatric TB cases occurred in foreign-born children or children of recent immigrants. In 2001, the number of pediatric cases rose, the majority from the Compact of Free Association (COFA) states (Republic of Marshall Islands, Federated States of Micronesia, and Palau). There were nine new pediatric cases of TB; one under 5 years of age, one from 5-14 years, and seven from 15-19 years.

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Epidemiology of TB

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Site of Disease

Pulmonary TB accounted for 87% (n=130) of cases diagnosed in 2001. Tuberculosis, however, is a systemic disease and can affect any area of the body. Extrapulmonary TB accounted for 13% (n=20) of cases. These cases may be harder to detect. Patients may not show the typical TB signs and symptoms such as a prolonged cough and an abnormal chest x-ray.

Drug Resistance

Overall drug resistant TB has decreased. During the past eight years, the rate of TB drug resistance has declined from 18.3% of culture-confirmed cases in 1994 to 9.6% in 2001. From 1994 to 2001, multi-drug resistant TB (MDR-TB), as defined by resistance to at least isoniazid (INH) and rifampin (RIF), was found in an average of 1.4% of Hawai`i's culture-confirmed cases, compared to the national MDR-TB estimate of 1% of all cases reported in 2001.[1] To prevent development of drug resistant TB, an initial four-drug regimen is usually recommended for newly diagnosed cases with directly observed therapy (DOT).[2]

TB and HIV/AIDS

TB-AIDS co-infection is less common in Hawai`i than on the mainland. In 2001, only one TB case in Hawai`i was co-infected with HIV, accounting for less than 1% of the total cases. In comparison, an estimated 9% of all TB cases diagnosed in the US last year were co-infected with HIV.[1] These cases were generally concentrated in large urban centers on the mainland.

Effects of Immigration

Hawai`i's TB morbidity rate is determined by current and past patterns of immigration. The Immigration Act of 1990 and the COFA have resulted in a steady influx of new immigrants, residents, workers and visitors from nations in Asia and the Pacific Basin that have a high prevalence of TB (See Fig. 2). These individuals may establish residence in Hawai`i and obtain jobs as non-immigrants. Individuals coming from the COFA states are exempt from the usual overseas health examination required of immigrants to the US, and thus are not actively screened for TB.

In 2001, the US Immigration and Naturalization Service officially admitted 3,870 new immigrants to Hawai`i, 67% of whom were from the Philippines.[3] In the same year, 124 new TB cases, representing 82.7% of the state's morbidity, were in foreign-born individuals. In comparison, only 49% of all the active TB cases reported in the US in 2001 were foreign born, although this percentage has steadily increased from 27% in 1992. Persons born in the Philippines accounted for the majority of Hawai`i's foreign-born cases, comprising 71.0% of this group, followed by those born in the COFA states (10.5%), Korea (7.3%), and China (4.0%) (see Figure 2). Many immigrants arrive with LTBI, and some may develop active TB. Tuberculin skin test data for 1998-2000 estimated that around 60% of Oahu's immigrant population was infected with the TB bacteria, or had LTBI.

In an attempt to reach this foreign-born population, the Hawai`i TB Control Branch has embarked upon two projects funded by the CDC: the Targeted Testing Program[4] and "Improving Contact Investigations in Foreign-born Populations" (this issue). Increased efforts to reach

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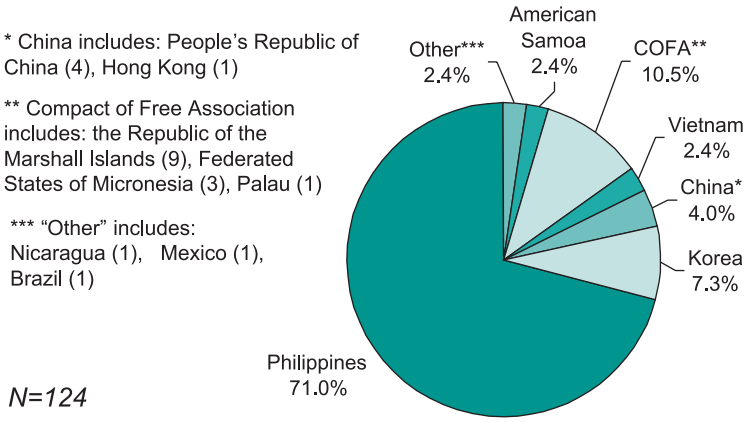
Fig. 2: Foreign-born TB Cases by Place of Birth – Hawai`i, 2001



Communicable Disease Report

Communicable Disease Division	586-4580
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The Health State
HAWAI'I STATE DEPARTMENT OF HEALTH

Editors:
David Sasaki, DVM, MPH
Mona Bomgaars, MD, MPH

Published bimonthly by the Hawai'i Department of Health, Communicable Disease Division, Disease Outbreak and Control Division, 1250 Punchbowl Street, Honolulu, Hawai'i 96813
Postage paid at Honolulu, Hawai'i

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high risk populations will improve case detection and limit the development of active disease through the use of preventive therapy.

Hawai`i's TB Program

The Hawai`i State TB Control Program provides administrative TB screening, chest x-rays and all TB medications free of charge. In addition, clinical services (nurse and physician visits) including DOT and bilingual outreach in 11 different dialects are available. Programmatic activities include the TB registry, surveillance/epidemiology, contact investigations, targeted testing, and health education. Several new research projects with the CDC have also been initiated recently. Currently the program is divided into two temporary clinics until renovations are completed at Lanakila Health Center. A model TB clinic and new digital x-ray system are currently being built. The Center's re-opening is scheduled for early 2003.

For further information, please call 808-832-5731, or visit our web site at: *http://www.hawaii.gov/doh/resource/comm_dis/tb/index.htm.*

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Submitted by Dzung Thai, M.P.H., Epidemiologist, Jessie Wing, M.D., Chief, and Ricardo dos Santos e Silva, M.P.H., Contact Investigations Epidemiologist, Tuberculosis Control Branch.

Definitions:

Latent TB infection (LTBI)
- Infected with *Mycobacterium tuberculosis* but asymptomatic.
- Has positive tuberculin skin test (TST): generally ≥10 mm induration.
- Has normal chest x-ray.
- Not infectious.
- Not reported to Department of Health (DOH).

Active TB disease (TB case)
- Infected with *M. tuberculosis* and generally symptomatic.
- Usually has positive TST (≥10 mm).
- Usually has abnormal chest x-ray.
- Potentially infectious.
- Reported to DOH.

CDC Grant Awarded to Tuberculosis Program

For Contact Investigations in Foreign-Born TB Cases

Contact Investigation

Contact investigation (CI) is part of an integrated and comprehensive approach to TB control at the Hawai`i State Department of Health (DOH) Tuberculosis Control Branch. To ensure proper identification of all contacts to active and suspect TB cases, the CI team depends on information provided by the index case, family members, TB program doctors, public health nurses, targeted testing personnel, and outreach workers, as well as private physicians and other hospital personnel. CI assesses the general risk and environmental conditions of exposure as well as the ability of a contact to respond to microbial challenge. A new two year CDC study, *'Improving Contact Investigation in Foreign-Born Populations'*, will enable the program to further improve CI in Hawai`i and contribute to our understanding of an emerging national issue concerning the increase of tuberculosis among foreign-born (FB) individuals in the United States.

Objectives

One of the main objectives of CI is to prevent the spread of tuberculosis to other persons, although contact investigation is also used as a case finding tool. CI specifically aims to:

1) Identify people who were exposed to a person with infectious TB,
2) Evaluate these people for latent TB infection (LTBI) and active TB disease,
3) Provide appropriate treatment for those with LTBI and active TB disease.[1]

Procedures

Contact investigation is initiated within 48 hours on all reported suspected and confirmed TB cases and is usually completed within a two-month period. The CI team consists of an epidemiologist, a public health nurse and two outreach workers. In most instances the CI team goes to the home of the person diagnosed with active TB (or suspected to have TB) and attempts to compile a list of individuals who may have had contact with the TB index case during the six months prior to diagnosis of TB. Standard CI procedures classify contacts as either 'close or casual'. Close contacts are usually those individuals who spend four hours or more per day with a suspected or con-

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firmed TB case. [2] Contacts are classified as casual if they spend less than four hours per day with a suspected or confirmed TB case. Given the higher level of exposure of close contacts, they are given highest priority for CI evaluation.

Great care is taken to establish the duration and frequency of contact between the case and its contacts, especially contacts of TB cases with sputum smears with acid fast bacilli (AFB) and/or chest x-rays (CXR) with cavities. The environmental conditions (e.g. ventilation, size of room, etc) of the location in which the contact likely took place are also evaluated.

Each contact identified in the household, workplace, or other location is added to a contact summary sheet and administered an initial tuberculin skin test (TST) unless the contact has a documented history of a positive TST or prior diagnosis of TB. For contact investigation, the cutoff for a positive TST is ≥5mm induration, whereas the cutoff for a positive TST in the general population in Hawai'i is ≥10mm induration. In most cases, an initial TST is administered to the contact during the first home or worksite visit, and if the TST is negative, another TST is done three months later (see Figure 1).

Contacts with a positive initial TST, prior TB or a positive TST after three months are referred to the DOH TB clinic for a CXR. If the contact is found to have a normal CXR, and thus not considered a TB suspect, TB prophylaxis is strongly recommended. Contacts younger than 18 years of age are given high priority and directly admitted to the DOH TB clinic for evaluation and treatment. Isoniazid (INH) or rifampin (RIF) are the medications of choice for the treatment of LTBI. INH is usually prescribed for nine months, while RIF is prescribed for four months.

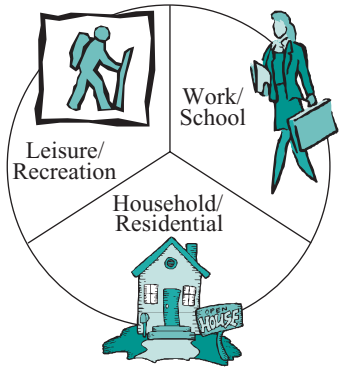
Patients who show an abnormal CXR are immediately evaluated for TB disease with sputum collection and culture for *Mycobacterium tuberculosis.* Contacts confirmed to have TB are started on a four-drug therapy with isoniazid, rifampin, pyrazinamide and ethambutol and are placed on directly observed therapy. Directly observed therapy is a process by which outreach workers go to the TB patient's household or other location and observe the patient taking all the prescribed TB medications.

New Approaches to Expand and Improve Contact Investigation

Contact investigation relies on the prompt and complete identification of all contacts of a suspected TB case within six months of the diagnosis of the index case. Several methods have been developed to help identify contacts at increased risk of becoming infected with TB. One of these approaches is based on the use of concentric circles.[1] Concentric circles categorize contacts according to the degree of closeness and the location of exposure to the TB case. Potential exposures include: household/residential, work/school, and leisure/recreation (see Figure 2). Once contacts have been identified as either close or casual and the locations of exposure have been determined, the TST results of close contacts determine if the contact investigation should be extended to casual contacts. Contact investigation is extended when the rate of all close contacts with new positive TST is greater than the new positive TST rate for the overall community. However, expanding CI does not only depend on the new positive TST rate from concentric circles. Other factors considered to guide further CI include infectiousness of the TB case (e.g., sputum smear positive), host factors of the contact (e.g., HIV, cancer) and environmental conditions of the probable location of exposure (e.g., ventilation of the location).

Figure 2.

Concentric Circle in Contact Investigation, Hawai'i 2001



Another approach to expand CI is the analysis of 'social networks' from sexually transmitted disease research.[3] The identification of contacts is not always a straightforward process. Patients may be reluctant to identify some or all of their contacts[1] due to the uncertainty of what may happen to them, their family members, friends and/or co-workers. Some

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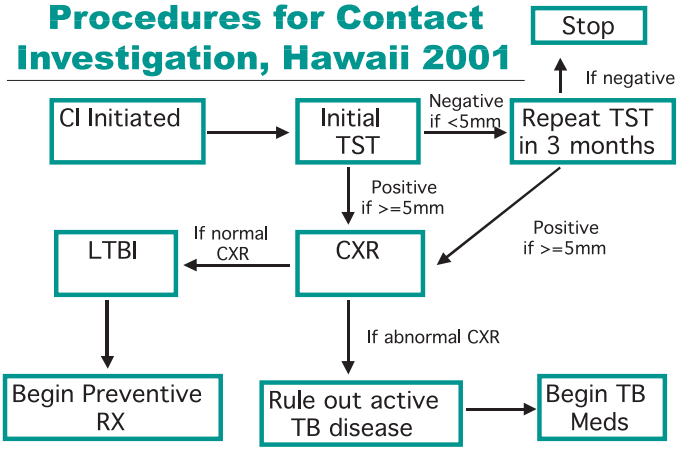
Figure 1.

Procedures for Contact Investigation, Hawaii 2001



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patients have very complicated social networks that may involve use of illegal drugs or other activities that the patient may not want to disclose. Recent immigrants may not want to disclose name of contacts because of their immigration status. Others may be reluctant to reveal the identity of contacts due to fear of being ostracized by family members, coworkers and/or employers. This poses a problem, since undisclosed individuals may have been close contacts and in need of proper evaluation and treatment. The emphasis on analysis of social networks allows contact investigators to identify all contacts and to become more sensitive to the needs and fears of certain populations, as well as to decrease the lag time between exposure of contacts and proper evaluation and/or treatment.

The future of TB CI is promising, since new molecular techniques may aid in the identification of related *M. tuberculosis* strains. DNA fingerprinting or restriction fragment length polymorphism analysis (RFLP) is currently being used to help identify clusters of TB among certain populations.[4] RFLP may be used to monitor local and foreign strains of *M. tuberculosis* in Hawai`i, the United States and possibly internationally. The DOH TB Control Branch is initiating a new database or RFLP library of TB isolates in Hawai`i. This database will not only benefit contact investigation and epidemiological surveillance, but also TB patients and their contacts. Other molecular techniques may prove to be cost-effective alternatives to DNA fingerprinting, such as spoligotyping and the miru test. Currently no local laboratories provide these services in Hawai'i. Therefore, the TB Control Branch refers isolates to the California State Laboratory for DNA fingerprinting.

Research Study

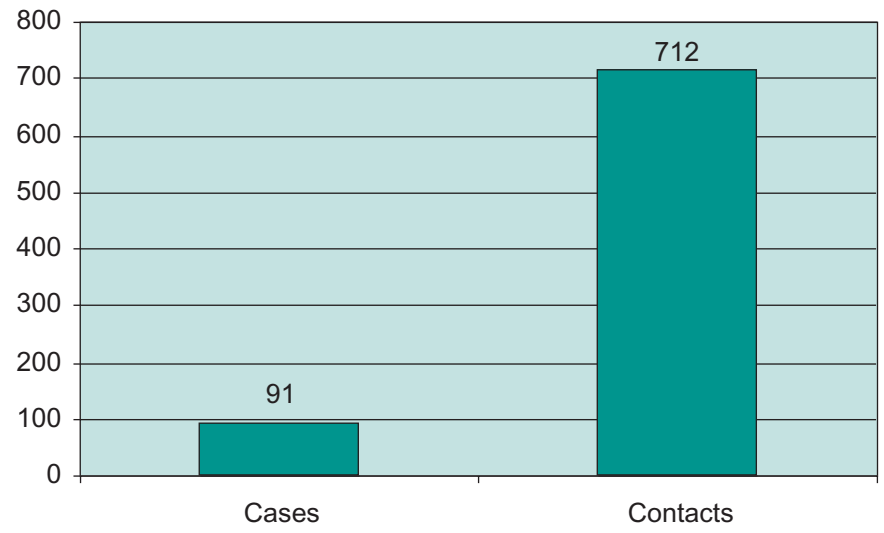
The CDC has funded a two-year research study at the DOH TB Control Branch to improve contact investigation in foreign-born populations. Three sites, Hawai`I, San Diego County and Seattle–King County, were selected through a competitive process to participate in this multistage research study. The objectives of this study are:

1) To describe the epidemiologic characteristics of recent active pulmonary tuberculosis cases and their contacts overall and by community and country of origin,
2) To define case, contact, and environmental risk factors for transmission of *M. tuberculosis*,
3) To describe contact investigation procedures and outcomes in different foreign-born communities,
4) To utilize findings from this study to restructure tuberculosis case and contact interviews and contact investigation procedures in an effort to improve overall outcomes in each foreign-born community, and
5) To compare findings from this study with those from a planned prospective study in the same foreign-born communities.

This research project has two phases: a retrospective and a prospective phase. The retrospective phase began in April 2002 and should be completed by the end of 2002. During this period, the medical records were reviewed for all 2001 foreign-born cases and their contacts on the island of O`ahu. The retrospective study project was composed of four distinct stages.

Figure 3.

Total number of pulmonary cases and their contacts, Hawai'i 2001



Four Stages: Data Abstraction and Revisions

The **first stage** involved data abstraction and completion of a 54-item questionnaire for each case and their contacts.

- There were 107 FB cases and 725 contacts evaluated (mean of 6.8 contacts per case).
- There were 91 pulmonary cases with 712 contacts (mean of 7.8 contacts/ case) and 16 extra-pulmonary cases with 13 contacts (mean of 0.8 contacts/case) (see Figure 3).

The **second stage** involved gathering information from external agencies such as hospitals, private physician's offices and laboratories.

The **third stage** involved reviewing and/or updating questionnaires before transfer of questionnaires to the CDC.

The **fourth stage** focused on further revisions, updates and/or clarifications at the request of the CDC to ensure high quality and accuracy of the abstracted data.

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Looking Forward

The CDC protocol for the prospective portion of this project should be received late 2002. Data collection will be initiated following approval of the DOH Institutional Review Board. The prospective study will follow a cohort of TB cases and their contacts through a determined period of time, while collecting information on several variables to be subsequently analyzed and correlated. The addition of new molecular techniques by the TB Control Branch to establish a new *M. tuberculosis* database should improve surveillance, contact investigation, epidemiologic confirmation and monitor movement of TB strains in the Asia-Pacific Region. The analysis of social networks and application of concentric circles should also broaden the scope of CI and aid in the identification of close and casual contacts to decrease TB transmission. The TB Control Branch hopes to use the results of this study to develop improved prevention protocols and apply them to routine CI conducted in Hawai`i. With the increasing proportion of TB among foreign-born populations in the U.S., this CDC funded study in Hawai`i, San Diego and Seattle-King County will be valuable in improving control and prevention of TB infection in our diverse communities.

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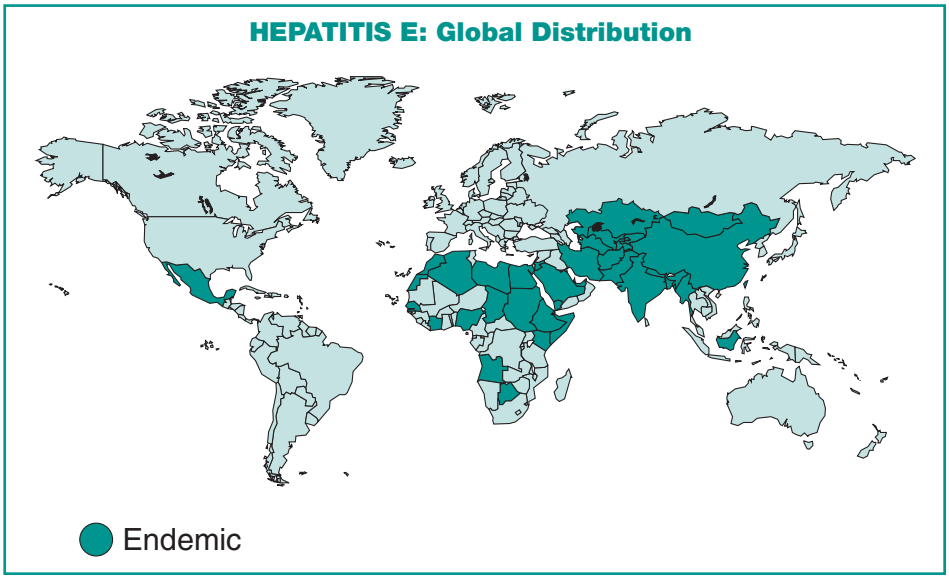
Submitted by Ricardo dos Santos e Silva, M.P.H., CI Epidemiologist, Dzung Thai, M.P.H., Epidemiologist, and Jessie Wing, M.D., Chief, Tuberculosis Control Branch.

Epidemic Hepatitis

Incidence and Distribution

Although not well know in the alphabet soup of hepatitis viruses, hepatitis E virus (HEV) is the champion of epidemics of hepatitis. There were reported outbreaks of 29,000 cases of hepatitis E in New Delhi in 1955-56 and another 52,000 cases in Kashmir, India with 1560 deaths in 1978. Most of these fatalities were among pregnant women in their third trimester, the sine qua non of hepatitis E virus. The largest outbreak may have been in Xinjiang, China where as many as 120,000 cases were reported.[1] HEV is endemic in a broad band of countries across Africa and Asia but only in Mexico in the Americas. (See fig 1)



Epidemiology

Like hepatitis A virus, HEV is enterically transmitted, primarily through contaminated drinking water. Specific reservoirs have not been identified to date. Rats and swine have been implicated, but RNA homology studies of isolates from each species demonstrate some differences from the human isolates. Symptoms are indistinguishable from hepatitis A or hepatitis B disease and must be resolved by serological tests. The incubation period for HEV is 2 to 9 weeks and the disease is usually mild and self-limiting with no sequelae. However, the case fatality rate in pregnant women is nearly 20%; women in the third trimester of pregnancy are especially high risk with death caused by fulminant hepatitis.

The Virus

HEV is a RNA virus (Class IV) that has been cloned and sequenced. It is a non-enveloped virus similar in genetic orga-

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Epidemic Hepatitis

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nization and structure to caliciviruses. Recent research at the National Institute of Allergy and Infectious Diseases (NIAID) found similar viruses infecting pigs and rats that cross-react serologically. Human isolates have shown 97-99% homology. HEV in birds has also been described. The HEV's isolated to date have been placed in its own taxonomic group of "hepatitis E-like viruses."

Diagnosis

Diagnosis of HEV infections is based on:

- Clinical signs and symptoms, in conjunction with
- An epidemic, including
- A noticeable proportion of pregnant women succumbing to fulminant hepatitis.

A commercially available serologic test is produced by Genelabs Technologies. Physicians suspecting HEV in a patient may submit serum samples to the Department of Health laboratory, which will forward the samples to the Centers for Disease Control and Prevention for ELISA testing.

Hepatitis E in Hawai`i

Takahashi et. al. reported[2] that a patient had traveled to Hawai`i one month before becoming ill. The authors speculated that the patient's disease might have been acquired in Hawai`i because of a report[3] indicating 90% of 147 trapped rats from O`ahu and Hawai`i tested positive for antibodies to HEV. The nucleotide sequence of this isolate however, was closer to other isolates from Japan (95%-97% identity) than to United States and Hawai`i isolates (89%-91% identity). There has been no serological evidence of human infection in Hawai`i from rodent HEV or evidence that rodent HEV causes human disease.

Unknowns

Many unanswered questions remain concerning the epidemiology and pathogenesis of HEV. Unfortunately HEV research is slow. HEV is not a significant health problem in countries that have the resources to fund extensive research. However, at least one vaccine candidate has completed Phase I trials and has been shown to be safe and immunogenic. Efficacy trials are nearly complete in Nepal. Immune serum globulin may prevent morbidity in pregnant women, but this has not been clearly demonstrated.

Prevention

Prevention is based on the avoidance of untreated water, raw vegetables and fruits when traveling or living in endemic areas. Travelers to endemic areas and especially pregnant women should avoid ingestion of uncooked food and potentially contaminated water. Pregnant women should avoid these areas during epidemics.

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Submitted by Joe L. Elm, M.S., Chief, Hepatitis Control Section, Epidemiology Branch, and Mona R. Bomgaars, M.D., M.P.H., Physician, Communicable Disease Division.

Importance of Timely Reporting of Communicable Diseases

A Clinician's Perspective

EDITOR'S NOTE: For the past few months, Richard P. Creagan, M.D., has been employed by the Department of Health (DOH) as an epidemiological specialist in the Hawai`i District Health Office. Prior to that he worked as an Emergency Medicine physician both on the U.S. mainland and since 1991, on the island of Hawai`i. He has said that since joining the DOH, he has become acutely aware that physicians do not report communicable diseases to the DOH as required by state law. He also recalled that as a practicing physician, he disregarded and hence violated that law, in part because of a misconception he thinks is shared by many of Hawai`i's physicians - that if a disease is reported by a laboratory, i.e. because of a positive culture or other test, then no reporting is necessary by the physician.

Legal Basis for Disease Reporting

In June 2002, all Hawai`i physicians were sent the current revisions of the Hawaii Administrative rules, Title 11, chapter 156: Communicable Diseases (i.e. reportable communicable diseases). Also included were Exhibits A, B, and C. This document was accompanied by a letter from Paul Effler, M.D., M.P.H., Chief of the Communicable Disease Division highlighting the changes which included:

- New special reporting procedures for HIV infection,
- Clarification of reportable Group A beta hemolytic Streptococcal infections, and
- The addition of potential diseases of bioterrorism activity.

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Reporting Diseases

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If you deposited these documents in the circular file or some other inaccessible place (one of my favorites is under the seat of my car), this document may be accessed at – *http://www.state.hi.us/doh/rules/ADM-RULES.html.*

Chapter 156 states "Every health care provider caring for a person with a diagnosis, or provisional diagnosis in the absence of definitive test results for confirmation, shall notify the department as described in Exhibit A. If the case has not been reported to the DOH, the practitioner responsible for the management of the case or the health care facility in which the case is being treated shall report that case to the DOH. If neither the practitioner responsible for the management of that case nor the health care facility at which care is rendered reports, both shall be considered in default of their responsibility to report. The report shall conform to the mode (e.g. telephone, written) and time frame (e.g. Urgent; ASAP; Routine – within 3 days) specified for each disease or agent under Reporting Category in Exhibit A."

It is likely that if a physician fails to report a condition as required by law and this failure to report results in harm to someone, there would almost certainly be civil legal consequences that may or may not be covered by malpractice insurance.

The phrase in the above law "if the case is not known to have already been reported to the DOH" refers to reports by other health care providers, not laboratory reports.

Importance of Reporting

The DOH does not desire to prosecute physicians for violations, but rather is concerned with timely reporting of reportable conditions and seeks greater cooperation from Hawaii's health care providers. This enables the department to be more effective in monitoring trends in disease incidence in the community and rapidly implementing control/prevention measures for the reportable diseases. Appreciation is extended to all physicians who are aware and have complied with the reporting requirements.

Specific Example: Febrile Illnesses

The current emphasis on possible bioterroristic attacks has focused on the importance of the community physician and hospital emergency departments. A high index of suspicion regarding unusual illnesses or frequency of illnesses at first contact becomes the first line of defense. It is no longer appropriate to write off a febrile illness as the "flu" or viral syndrome, without considering appropriate testing and alternative diagnoses that require different diagnostic tests and therapeutic approaches. For example in the above illustration in Hawai`i, one should also consider

- leptospirosis, and
- murine typhus (both treatable), as well as
- dengue fever and
- West Nile disease.

The recent outbreak of dengue fever on Maui was brought under control because of rapid and aggressive investigation of this disease, the DOH laboratory implementing use of the CDC confirmatory diagnostic test, and intensely focused mosquito control efforts.

While no cases of West Nile disease have yet been reported here, it is likely that visitors to the islands who have contracted the disease on the mainland will present to local health care providers. Providers should strive to include careful travel and exposure histories in formulating a list of possible diagnoses of these febrile illnesses.

EDITOR'S NOTE: Hawaii's first imported case of West Nile disease was recently confirmed by the Centers for Disease Control and Prevention. The patient was a visitor from Minnesota whose illness started before he left home.

Foodborne disease outbreaks, if recognized early, may prevent further cases by prompt investigation of the possible source and by appropriate treatment of the exposed (e.g. immune globulin in Hepatitis A outbreaks).

Early recognition of pertussis might prevent further spread in a daycare or school population or to vulnerable infants.

Diseases marked **urgent** shall be reported by telephone as soon as a provisional diagnosis is established. Most such diseases are highly communicable. For example, if measles or rubella is suspected in a patient because of suggestive symptoms, morbilliform rash and no history of immunization, the appropriate office should be called. If the diagnosis is made after business hours, please call (808) 247-2191 on O`ahu or 1-(800) 479-8092 on the neighbor islands.

The Report Form

A copy of the DOH Communicable Disease Report form is shown on the following page. This should be used to report all diseases except tuberculosis, Hansen's Disease, AIDS and sexually transmitted diseases, which use separate forms. A list of notifiable diseases is available online as part of Hawai`i Administrative Rules Title 11, Chapter 156. Reporting forms are available by calling (808) 586-4586 at the Epidemiology Branch in Honolulu. Completed forms may be faxed to the appropriate number listed on the form.

In addition, supplemental forms or questionnaires seeking more detailed epidemiological information on specific diseases may be faxed to your offices. Completion of these forms and their prompt return is essential for disease surveillance and outbreak control. We will appreciate your anticipated cooperation.

A follow-up article will review Hawai`i's isolation and control requirements in the next issue.

For more information, please contact Dr. Creagan at (808) 322-4877.

Submitted by Richard P. Creagan, M.D., Epidemiological Specialist, Hawai`i District Health Office.

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STATE OF HAWAI`I
DEPARTMENT OF HEALTH
CONFIDENTIAL

COMMUNICABLE DISEASE DIVISION
EPIDEMIOLOGY BRANCH
CONFIDENTIAL

COMMUNICABLE DISEASE REPORT

Use this form to report all diseases except Tuberculosis, Hansen's Disease, Sexually Transmitted Diseases, or AIDS, to the DOH office in your County.

PATIENT INFORMATION

DATE OF REPORT	PARENT OR GUARDIAN (IF A MINOR)				
LAST NAME	FIRST	MIDDLE	AGE	DATE OF BIRTH	SEX ☐MALE ☐FEMALE
ADDRESS (STREET)	CITY		ZIP CODE	ISLAND	
RACE	HISPANIC ☐ YES ☐ NO	STATUS ☐ RESIDENT ☐ TOURIST ☐ MILITARY ☐ MILITARY DEPENDENT			
PATIENT'S PHONE NO. (RES.)	PATIENT'S PHONE NO. (BUS.)	OCCUPATION	SCHOOL / DAY CARE / WORKPLACE		

MORBIDITY DATA

DISEASE:

DATE OF ONSET:

LABORATORY TEST RESULTS:
INDICATE LABORATORY PERFORMING TESTS(S)

CHECK APPROPRIATE BOX:

	PATIENT		HOUSEHOLD MEMBER	
1) IS A FOODHANDLER?	☐ YES	☐ NO	☐ YES	☐ NO
2) ATTENDS OR WORKS AT A DAY CARE ?	☐ YES	☐ NO	☐ YES	☐ NO
3) IS A HEALTHCARE WORKER?	☐ YES	☐ NO	☐ YES	☐ NO

POSSIBLE SOURCE

HOSPITALIZED?	HOSPITAL NAME	DATE OF EXPOSURE
ADMISSION DATE	DAYS HOSPITALIZED	IMPORT STATUS ☐ IMPORTED ☐ INDIGENOUS / DIAGNOSIS ☐ CLINICAL ☐ LAB CONFIRMED

REPORTING SOURCE

ATTENDING PHYSICIAN
AND ADDRESS / PHONE NO.:

PERSON OR AGENCY REPORTING
AND ADDRESS / PHONE NO.:

FOR DOH USE ONLY

DATE RECEIVED BY DOH:

EPILOG NO.	MMWR WEEK NO.
INVESTIGATOR INITIALS	NETSS RECORD NO.

The Health State
HAWAI'I STATE DEPARTMENT OF HEALTH

Oahu
P.O. Box 3378
Honolulu, HI 96801
Phone: (808) 586-4586
Fax: (808) 586-4595

Maui
54 High Street
Wailuku, HI 96793
Phone: (808) 984-8213
Fax: (808) 984-8222

Hawai'i
P.O. Box 916
Hilo, HI 96720
Phone: (808) 933-0912
Fax: (808) 933-0400

Kaua'i
3040 Umi Street
Lihue, HI 96766
Phone: (808) 241-3563
Fax: (808) 241-3480

PLEASE SEND THIS REPORT IN DOH-ADDRESSED ENVELOPE OR FAX REPORT TO THE APPROPRIATE OFFICES ABOVE.

Vaccine for Children Provider's Response

Beginning in the year 2000, modifications were made to the Hawaii Vaccines for Children (VFC) Program that addressed vaccine accountability, vaccine management, ordering and distribution procedures, and provider compliance with VFC requirements. These modifications were instituted in order to meet National Immunization Program (NIP) requirements. Changes included redesigning and consolidating the vaccine administration visit record form, implementing a quarterly fax only ordering procedure, starting the VFC/AFIX provider site visits, and increasing communication with providers.

In April 2001 a two page survey designed to evaluate the effectiveness of the implemented strategies was mailed to each active VFC provider site statewide. Providers of only adult vaccines or those recruited during the survey were excluded. Respondents were asked to use a rating scale of 1 (very satisfied) to 5 (dissatisfied). Responses were grouped into 3 categories: very satisfied, satisfied, or dissatisfied, based on the scores.

A total of 262 provider sites were surveyed with a response rate of 83%. Results of the survey are as follows:

1. Vaccine Ordering & Distribution System
   - Vaccine ordering changes from phone order, year-round system to quarterly, fax-only system
   - Timely processing and distribution of vaccine orders

   93% rated being "Very Satisfied" with the new vaccine ordering procedures and timeliness of vaccine delivery.

2. Program Information & Technical Support
   - Increased communication with physicians/nurses via provider toolkit and VFC newsletter
   - Rapid response to provider inquiries

   87% rated being "Very Satisfied" with the program support provided.

3. Vaccine Administration Visit Record (VAVR)
   - Multiple forms to record Vaccines for Children eligibility and vaccine administration consolidated into one revised form
   - Information preprinted to reduce vaccine administration documentation errors

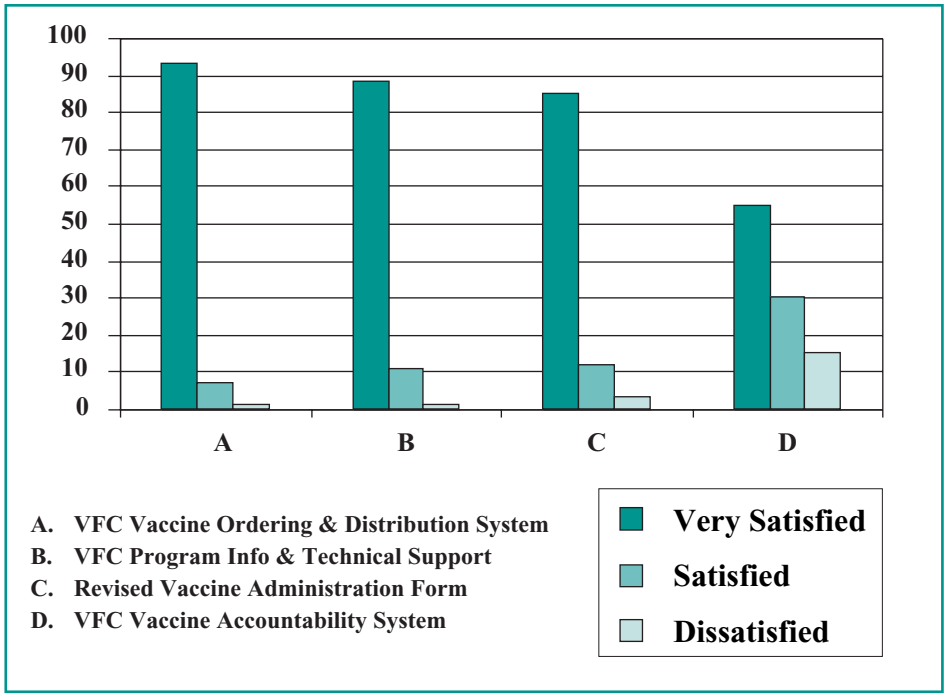
   85% rated being "Very Satisfied" with the newly designed record.

4. Vaccine Accountability System Vaccine accountability system implemented where none previously existed, utilizing:
   - New ordering form, requiring documentation of number of doses used since previous order and number of doses on hand
   - Comparison of number of VAVRs received with number of doses delivered

   85% rated being "Very Satisfied" or "Satisfied" with the new vaccine accountability procedures.

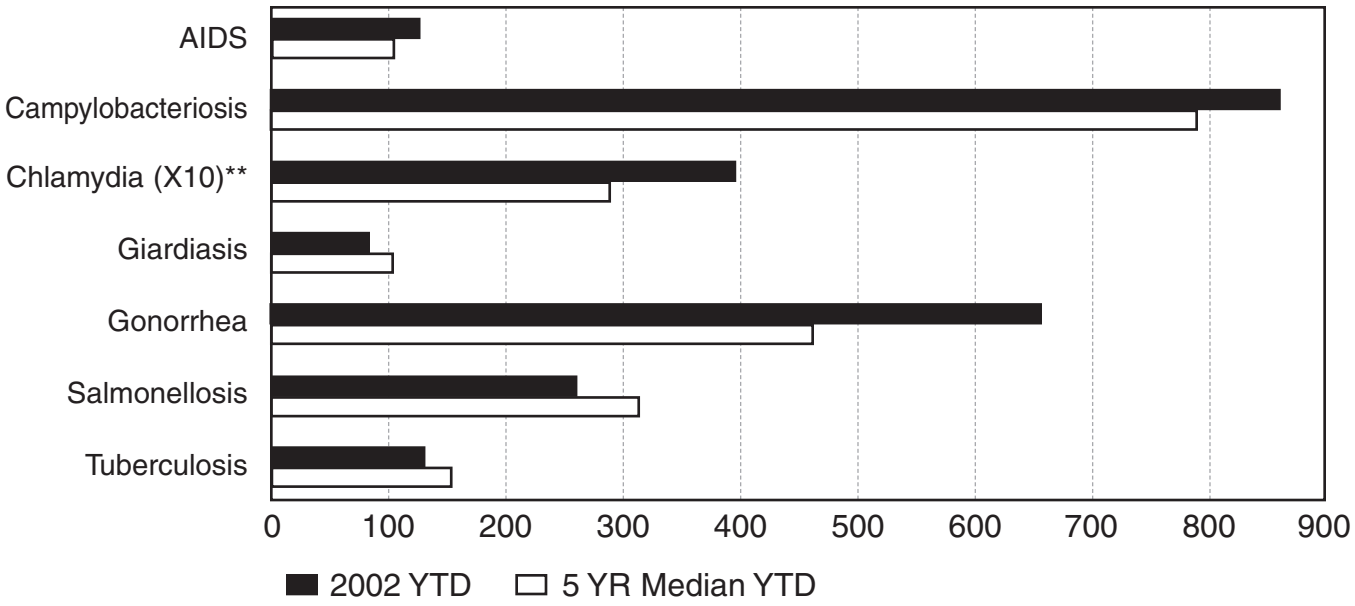
In conclusion, the strategies developed by the Hawaii Vaccines for Children Program were successful in providing program support and improving the vaccine ordering and delivery system. The new VAVR forms reduced time spent by providers in completing VFC forms, while improving the accuracy of documentation. Hawaii's Vaccines for Children Program continues to address the need for further development of vaccine accountability procedures.

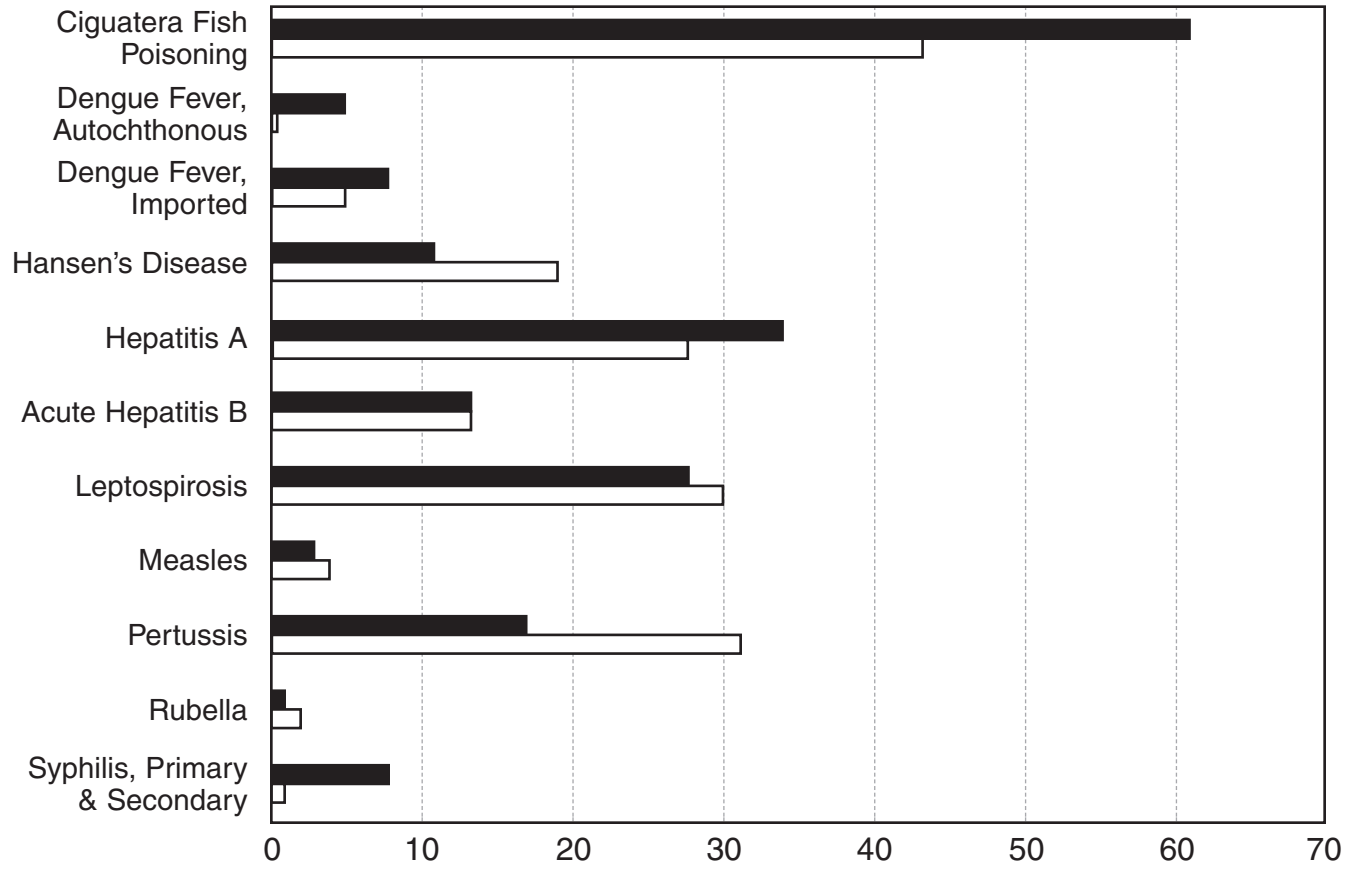
Submitted by: Loriann M. Kanno, Pharm D, Vaccine Supply & Distribution Unit, Hawai`i Immunization Program, Epidemiology Branch.



Communicable Disease Surveillance

Selected Diseases by Date of Report*
Hawai'i, 2002 Year-to-date Through November





* These data do not agree with tables using date of onset or date of diagnosis.
** The number of cases graphed represent 10% of the total number reported.

State of Hawai'i
Department of Health
Epidemiology Branch
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

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Communicable Disease Report

Paul V. Effler, M.D., M.P.H., Chief, Communicable Disease Division

November/December 2002

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- ***Importance of Timely Reporting of Communicable Diseases***
- ***Vaccine for Children Provider's Response***